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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/678,041	10/03/2000	Gary E. Horst	EMCS:027	5663

7590 03/14/2002

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EXAMINER

PEREZ, GUILLERMO

ART UNIT PAPER NUMBER

2834

DATE MAILED: 03/14/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/678,041

Applicant(s)

HORST, GARY E.

Examiner

Guillermo Perez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement filed January 29, 2001 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

The information disclosure statement filed January 29, 2001 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

Specification

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102 and 35 USC § 103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-3 rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kamata (U. S. Pat. 6,025,658).

Kamata discloses all the claimed structural limitations. The claimed structural limitations are capable of performing the claimed functions.

It would have been obvious at the time the invention was made for the motor to function in the way being claimed.

2. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamata in view of Habock et al. (U. S. Pat. 3,919,607).

Kamata substantially teaches the claimed invention except that it does not show that the air gap defined by at least one of the movable poles is different from the air gap defined by other of the movable poles. Kamata does not disclose that the circuit for energizing the phase winding provides an energizing current to the phase winding over a first energizing cycle that is different from the energizing current provided to the phase winding over a second energizing.

Habock et al. disclose that the air gap defined by at least one of the movable poles (8) is different from the air gap defined by other of the movable poles (8). Habock et al. disclose that the circuit for energizing the phase winding provides an energizing current to the phase winding over a first energizing cycle that is different from the energizing current provided to the phase winding over a second energizing. The invention of Habock et al. has the purpose of suppressing any electromechanical oscillation that may arise during operation.

It would have been obvious at the time the invention was made to modify the linear motor of Kamata and provide it with the air gap and energizing configuration disclosed by Habock et al. for suppressing any electromechanical oscillation that may arise during operation.

3. Claims 6-8, 11-13 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Horst (U. S. Pat. 5,844,343).

Horst discloses all the claimed structural limitations. The claimed structural limitations are capable of performing the claimed functions.

It would have been obvious at the time the invention was made for the motor to function in the way being claimed.

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Horst in view of Nitta (U. S. Pat. 6,181,047).

Horst substantially teaches the claimed invention except that it does not show that a maximum air gap established between the first pair of opposing rotor poles and the at least two stator poles is different from the maximum air gap established between the second pair of opposing rotor poles and the at least two stator poles.

Nitta discloses that a maximum air gap established between the first pair of opposing rotor poles and the at least two stator poles is different from the maximum air gap established between the second pair of opposing rotor poles and the at least two stator poles (figure 8) for the purpose of reducing the cogging torque as well as simplifying a starting circuit arrangement.

It would have been obvious at the time the invention was made to modify the air gap arrangement disclosed by Nitta for the purpose of reducing the cogging torque as well as simplifying a starting circuit arrangement.

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Horst in view of Nitta as applied to claim 9 above, and further in view of Habermann (U. S. Pat. 4,774,424).

Horst and Nitta disclose a machine as described on item 1 above. However, neither Horst nor Nitta disclose that the maximum air gap established between the first pair of opposing rotor poles and the at least two stator poles is defined by a notch in the profile of the face of the rotor pole.

Habermann discloses that the maximum air gap established between the first pair of opposing rotor poles and the at least two stator poles is defined by a notch (31) in the profile of the face of the rotor pole. Habermann's invention has the purpose of effect a direct measuring of the induction in the air gap of an electromagnetic machine.

It would have been obvious at the time the invention was made to modify the machine disclosed by Horst and Nitta and provide it with the notch disclosed by Habermann for the purpose of effect a direct measuring of the induction in the air gap of an electromagnetic machine.

6. Claims 14-15 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nitta.

Nitta discloses all the claimed structural limitations. The claimed structural features are capable of performing the claimed functions.

It would have been obvious at the time the invention was made for the stator to have normal forces acting with the rotor as claimed.

7. Claims 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nitta in view of Horst (U. S. Pat. 5,670,836).

Nitta substantially teaches the claimed invention except that it does not show that each of the stator poles in the first set of opposing stator poles defines a notched surface.

Horst discloses that each of the stator poles in the first set of opposing stator poles defines a notched surface (C). Horst's invention has the purpose of positioning the rotor in a stable detent position to facilitate starting of the machine.

It would have been obvious at the time the invention was made to modify the machine of Nitta and provide it with the notch configuration disclosed by Horst for the purpose of positioning the rotor in a stable detent position to facilitate starting of the machine.

8. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nitta in view of Shinto et al. (U. S. Pat. 5,396,137).

Nitta substantially teaches the claimed invention except that it does not show that the construction of the stator poles comprising the first set of opposing stator poles is substantially the same as the construction of the stator poles comprising the second set of opposing stator poles and wherein:

- a) during the given interval, a first pair of opposing rotor poles is brought towards alignment with first set of opposing stator poles;

- b) during the given interval, a second pair of opposing rotor poles is brought towards alignment with second set of opposing stator poles; and

c) the construction of the poles forming the first pair of opposing rotor poles is different from the construction of the poles forming the second pair of opposing rotor poles.

Shinto et al. disclose that the construction of the stator poles comprising the first set of opposing stator poles is substantially the same as the construction of the stator poles comprising the second set of opposing stator poles and wherein:

a) during the given interval, a first pair of opposing rotor poles is brought towards alignment with first set of opposing stator poles;

b) during the given interval, a second pair of opposing rotor poles is brought towards alignment with second set of opposing stator poles; and

c) the construction of the poles forming the first pair of opposing rotor poles is different from the construction of the poles forming the second pair of opposing rotor poles (figure 3). The invention of Shinto et al. has the purpose of offsetting the cogging torque and preventing a reduction in the amount of effective magnetic flux.

It would have been obvious at the time the invention was made to modify the machine of Nitta and provide it with the stator and rotor configuration for the purpose of offsetting the cogging torque and preventing a reduction in the amount of effective magnetic flux.

9. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nitta in view of Wanlass (U. S. Pat. 4,132,932).

Nitta substantially teaches the claimed invention except that it does not show that the circuit for energizing the at least one current carrying member provides an

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energizing current to the first current carrying member that is different from the energizing current provided to the second current carrying member over the given interval.

Wanlass discloses that the circuit for energizing the at least one current carrying member (24,30) provides an energizing current to the first current carrying member (24) that is different from the energizing current provided to the second current carrying member (30) over the given interval. Wanlass' invention has the purpose of maintaining the flux density in the stator at a maximum level.

It would have been obvious at the time the invention was made to modify the machine of Nitta and provide it with the energizing current configuration disclosed by Wanlass for the purpose of maintaining the flux density in the stator at a maximum level.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Perez whose telephone number is (703) 306-5443. The examiner can normally be reached on Monday through Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308 1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305 3432 for regular communications and (703) 305 3432 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.

Guillermo Perez
March 7, 2002



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